Creative Habitat Corp.

Ecological Consultants with special expertise in restoration and bioengineering

Presented at Brookhaven National Laboratory,

December 12, 2000

CHC, a short introduction

- Creative Habitat Corp. (CHC) is a highly specialized company. Our expertise covers only a portion of the required services for the anticipated reclamation project at BNL.
- We draw up plans for the ecologically sensitive restoration of a project site, we supervise the implementation of this work and we monitor the developmental progress – intervening when necessary to redirect the trajectory of the successional process as needed.
- At Brookhaven Ntl. Lab. Our expertise applies to the salvage of plant material, the review of construction procedures for environmentally sensitive approaches, the restoration of streambanks, approach areas, and staging areas, including, but not only wetlands.

CHC, a multifaceted company

- The following slide presentation focuses on a variety of different projects, mainly concentrating the attention on stream and wetland projects designed by us. We do not restrict our activities to wetlands, but also work in the dunes, forested uplands, grasslands and in salt marshes.
- Wherever we work we focus our attention on the best available knowledge and on applicable technologies. As such we have often been in the forefront of new technologies. It is a little known fact that it was Creative Habitat that first introduced the so-called “coir-logs” also known under the trade name “biologs” in this country in 1990. In fact that was one of the products that got us started.
- We no longer sell merchandize but only *consult*, *design*, *supervise and conduct research*. We still investigate and specify cutting edge technology that provide results for our clients and often make projects financially feasible that might otherwise not be implemented.

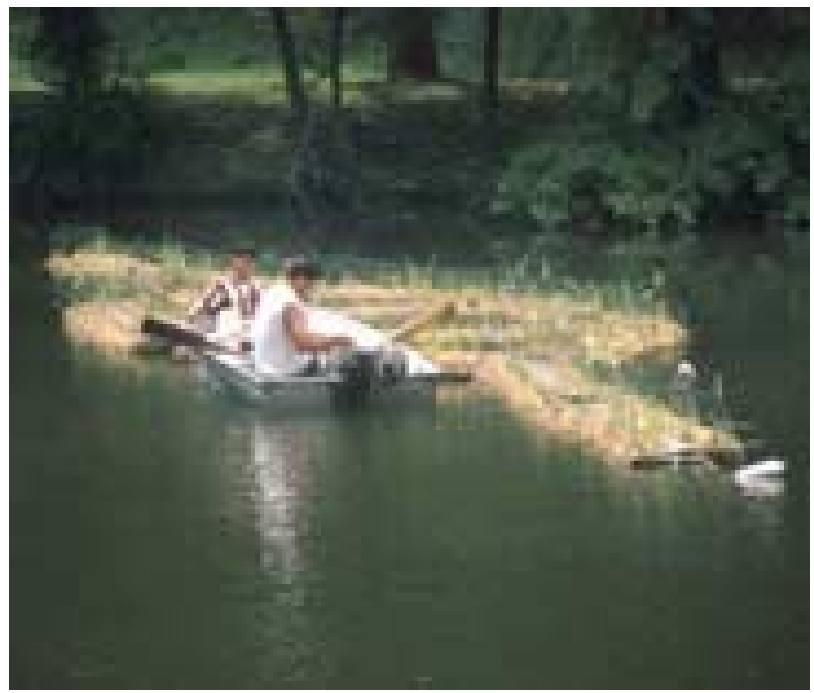
Innovation

- Creative Habitat Corp. was the first company to introduce coconut fiber based logs for stabilization of stream banks in the USA.

  Shown here a typical installation of the “log” along a small stream.

Technology

- CHC currently pioneers the use of floating planted habitat islands for water quality improvements where shore frontage cannot be used to establish filter beds.



Cutting cost

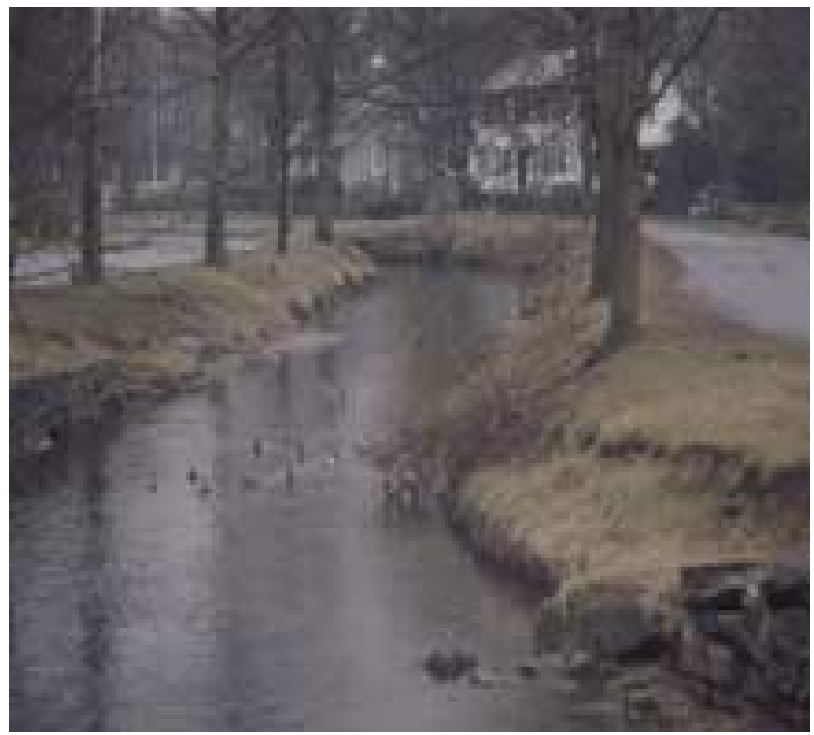
- Unconsolidated “mud” can be very expensive to excavate. Where site conditions permit we are able to use native plants to “cover” and contain problem soils. Prior to treatment the person shown would have sunk knee deep into “mud”.

Professional staff

- Our staff are trained ecologists of various specializations.
- Shown here, Robert Brauman, a herpetologist, recording information about a Blanding’s turtle being tracked with the help of a radio transmitter.

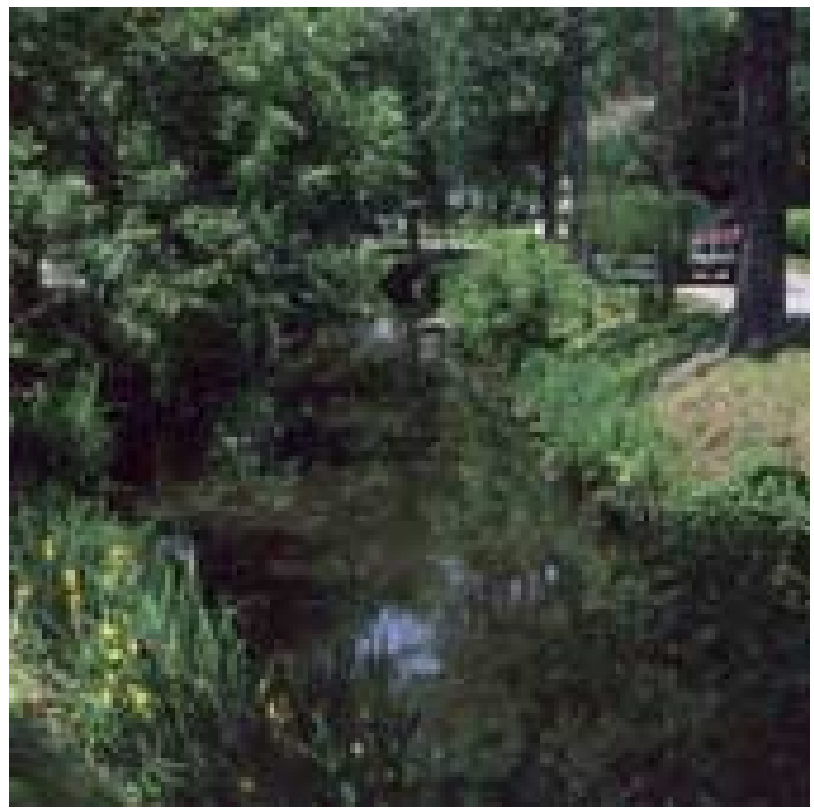
Project: Sheldrake River

- Bank erosion along this seemingly placid stream was in the past addressed by the building of stone walls (seen in foreground on right).



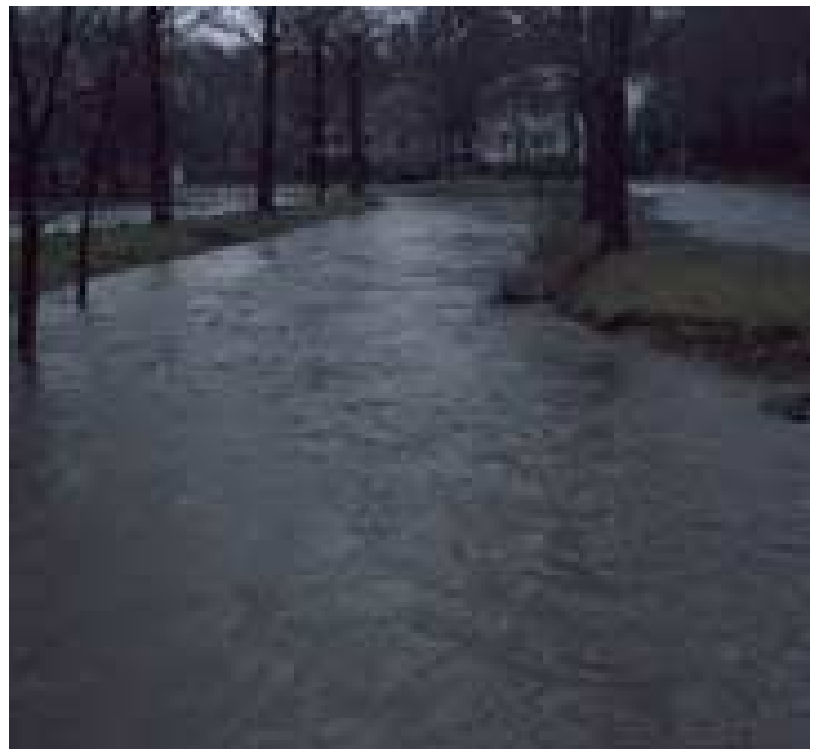
Project: Sheldrake River

- The project owner opted for significant cost savings, ecological improvements and an esthetic upgrade, which was favorably commented on by the many frequent users of this public space. Photo approximately two years after installation.



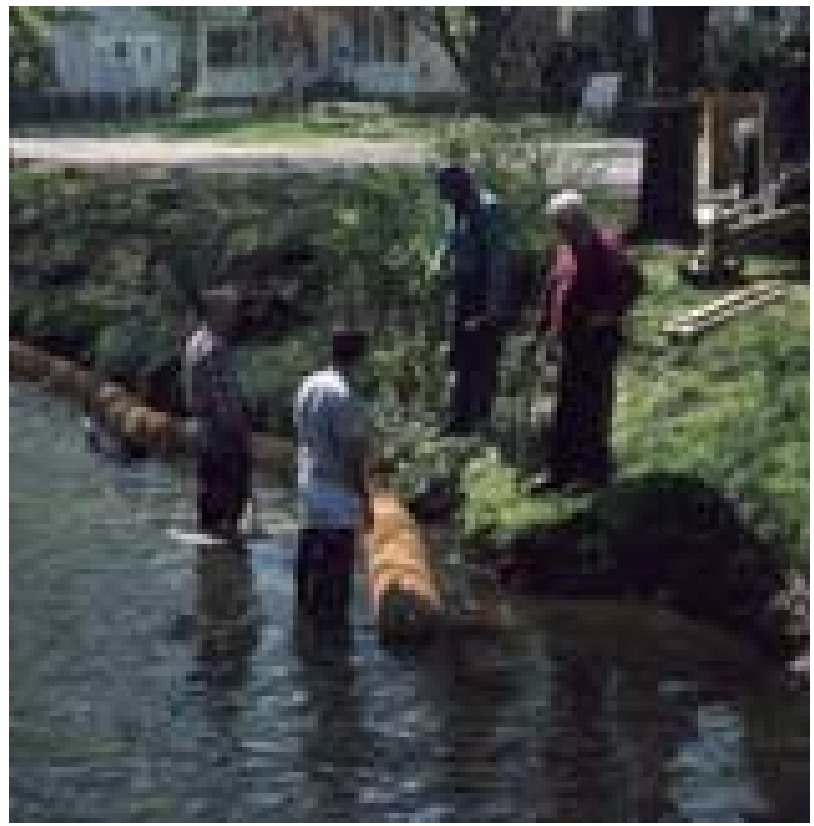
Project: Sheldrake River

- Located downstream from a flood control reservoir, the river turns into a raging torrent from time to time, without inflicting damage to the erosion control plantings.

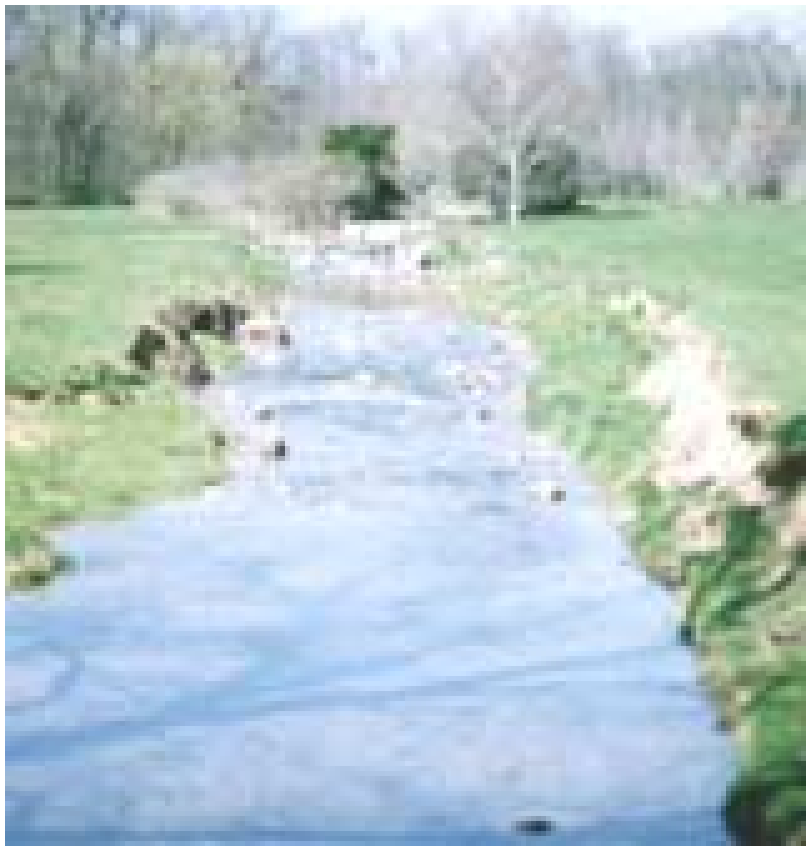


Project: Sheldrake River

- The work was installed by municipal labor, under guidance from Creative Habitat, adding to the cost savings and providing an unusual and well liked project for the work force.

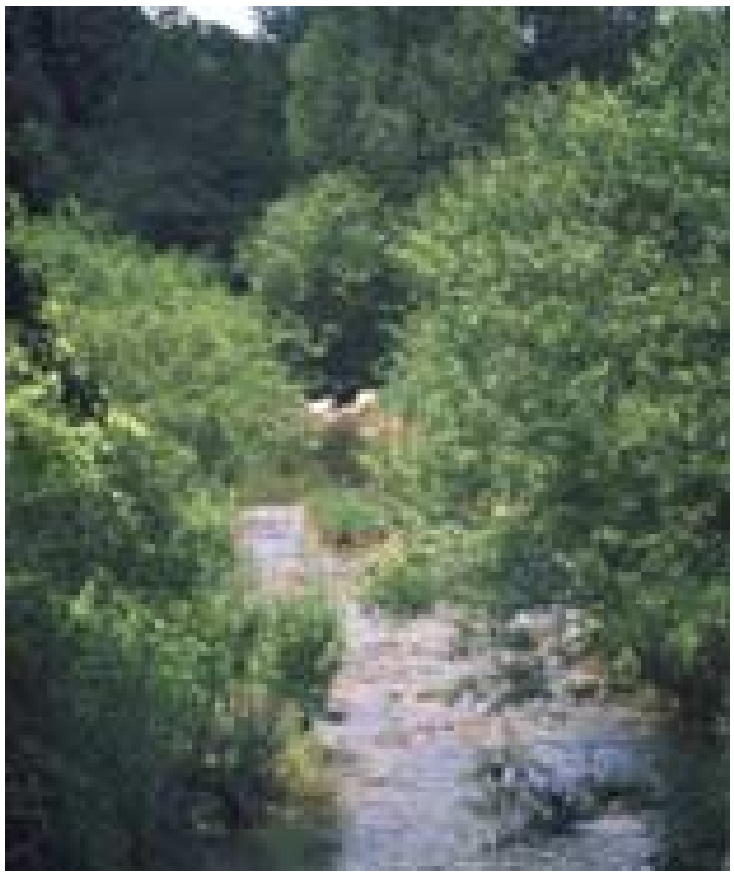


Project: Little Cedar Creek -A



- Photo 1990, prior to stream bank repair and stabilization work. This stream just outside urban Allentown, PA, is the recipient of storm water discharges from a 5 square mile area. An energy dissipater (concrete barrier with vertical slots) at the outfall of a storm sewer is visible in the upper middle.

Project: Little Cedar Creek -A

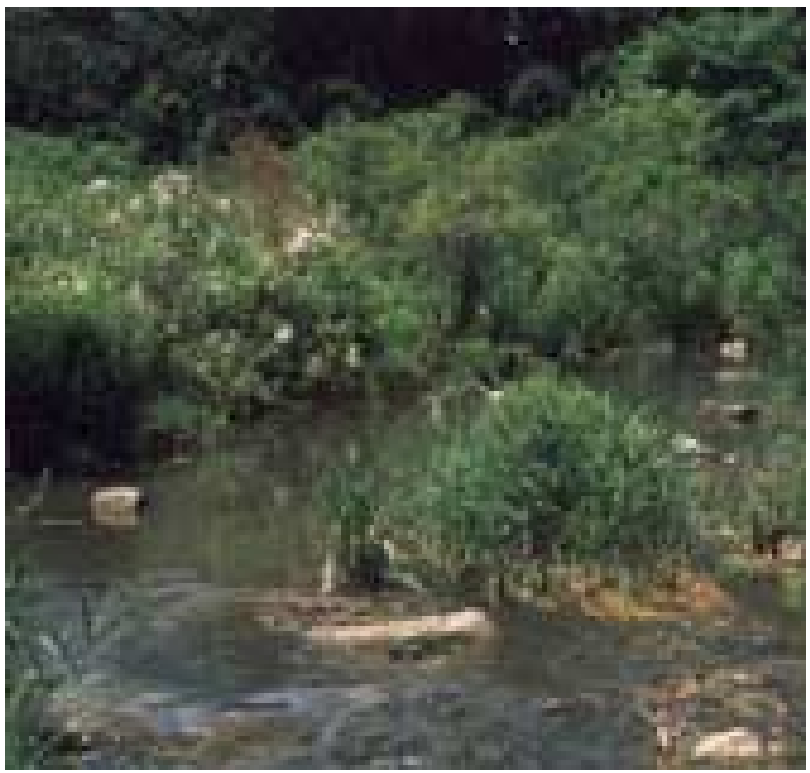


- Seven years after stabilization work this stream is almost un-recognizable. The plantings survived a 100-year storm event with velocities of more then 20 f/s only months after the initial installation.

Project: Little Cedar Creek -B

- The same stream, only here a whirlpool was continually eroding the embankments. Stone in foreground serve to roughen the streambed and are part of the restoration strategy.

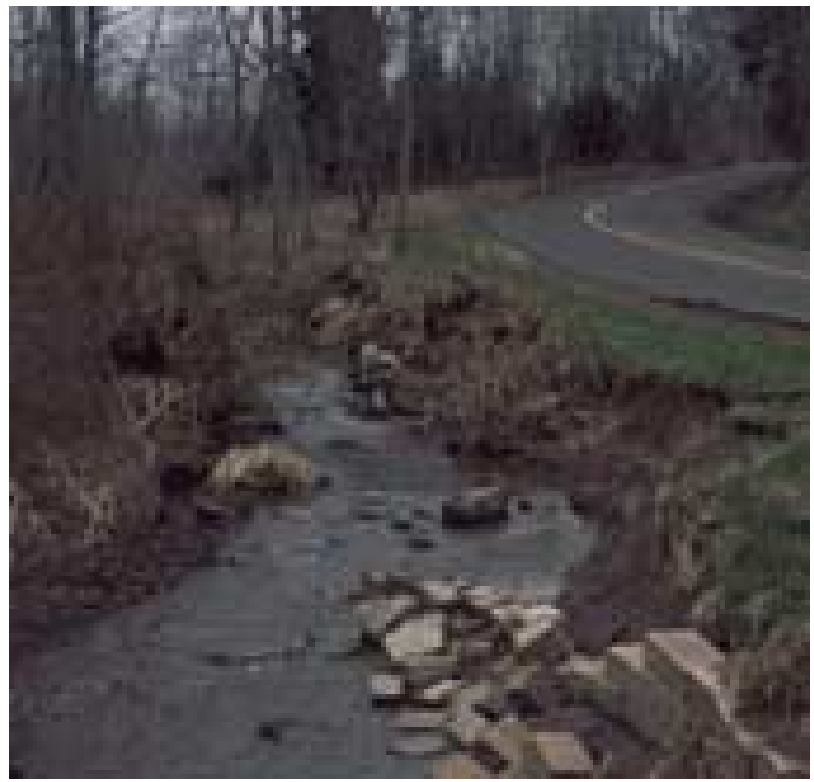
Project: Little Cedar Creek -B



- This photo was taken seven years after the stabilization work was done. However even one year after the planting the site had looked very similar.

Project: Roadside stabilization

- An unnamed small tributary to Fretz Valley Stream , Bucks County, PA, was beginning to undermine a local road and bridge abutments.

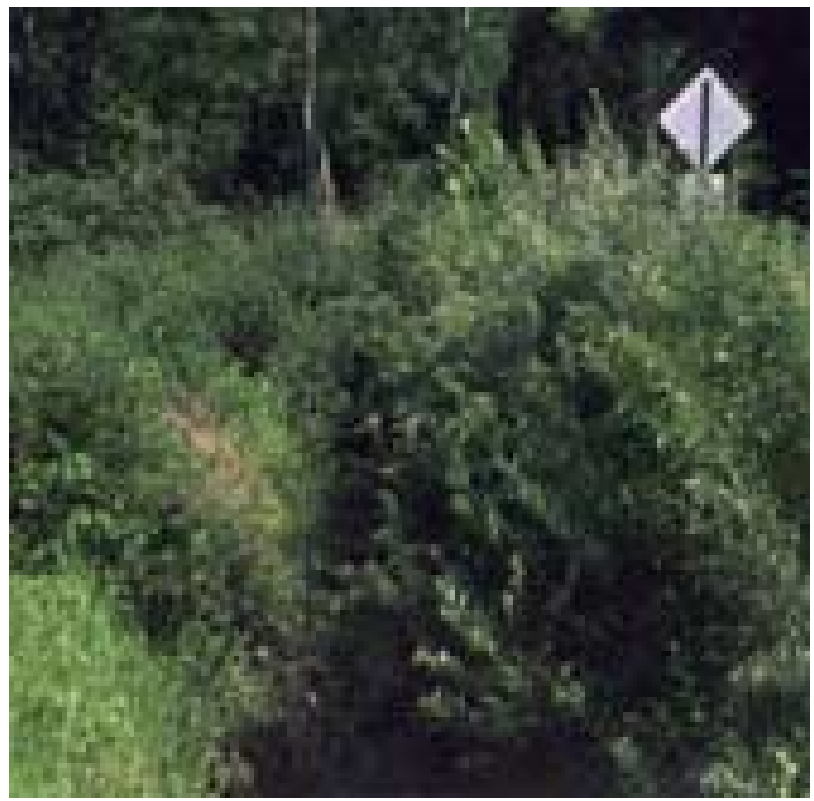


Project: Roadside stabilization

- Creative Habitat instructed crews of Pennsylvania DOT in the use of traditional brush layering techniques with willow cuttings and erosion control mats.

Project: Roadside stabilization

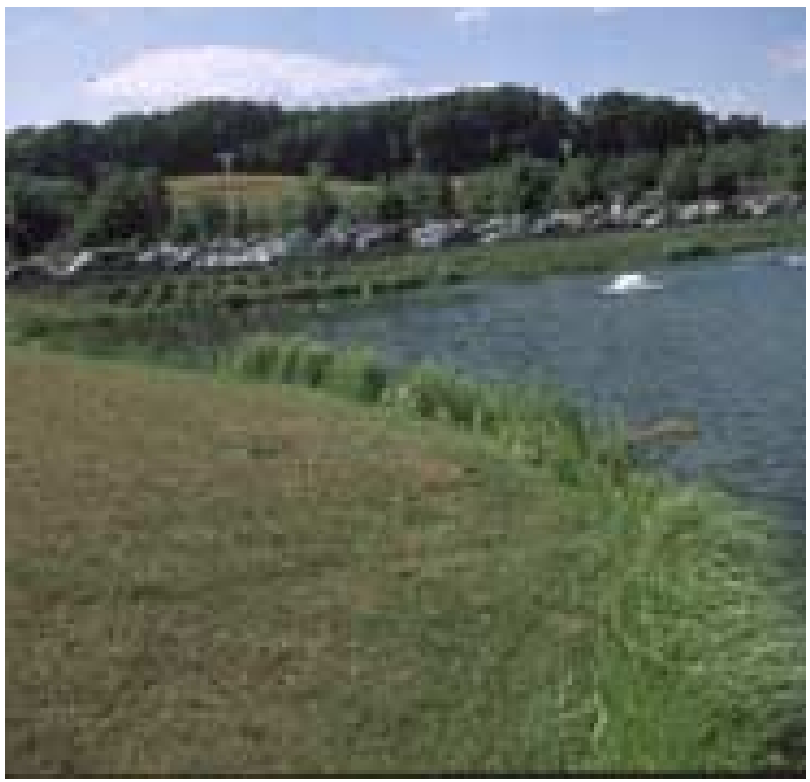
- Two years later the willows had grown 6 feet tall and the road embankment was fully stabilized.



Project: Green Hills Corporate Park

- Located in eastern PA, this corporate park was investing a significant amount of money to line this leaky fire pond. Creative Habitat's expertise was sought to prevent a return of this edge erosion after the work was done.

Project: Green Hills Corporate Park



- We combined targeted plant selection and an edge treatment with coconut fiber based bioengineering products to create this narrow stabile edge of “natural habitat”.

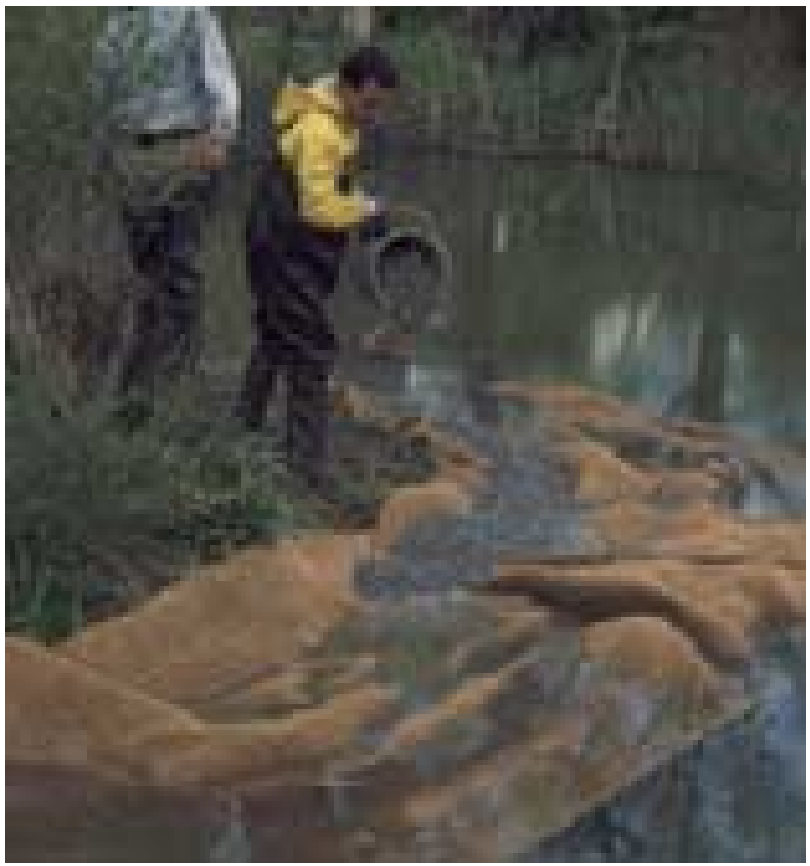
Herbivory

- Shown in the foreground is a demonstration planting of emergent wetland plants on herbivory resistant starter sods. Unplanted barren shore in background.

Herbivory

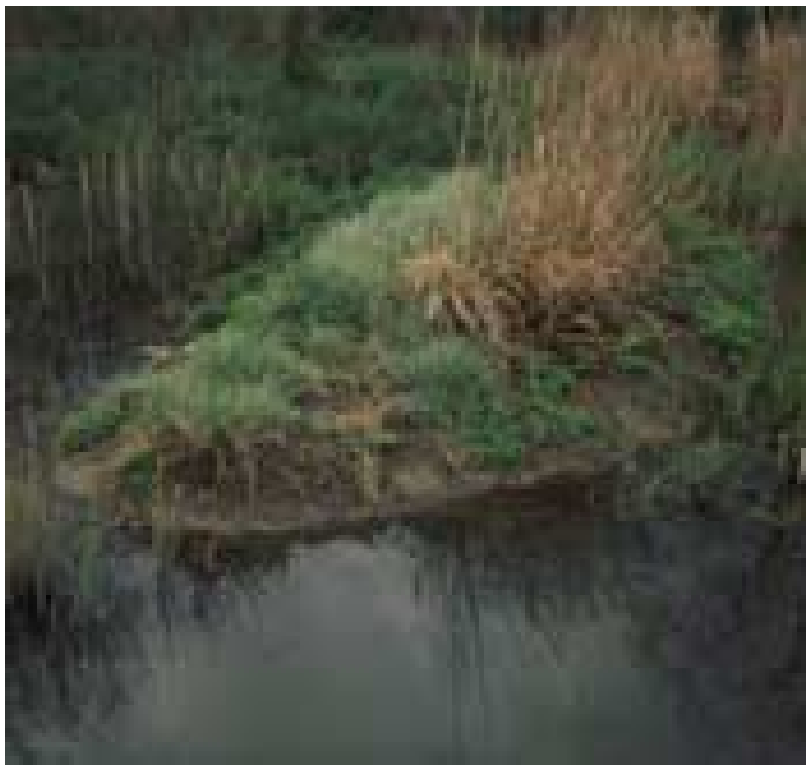
- One year later the demonstration planting had spread into a functional marsh which acted as a magnet for diverse wildlife, including a muskrat, several Canada Geese, Redwing Blackbird, amphibians and fish.

Prospect Park Zoo Bird Exhibit



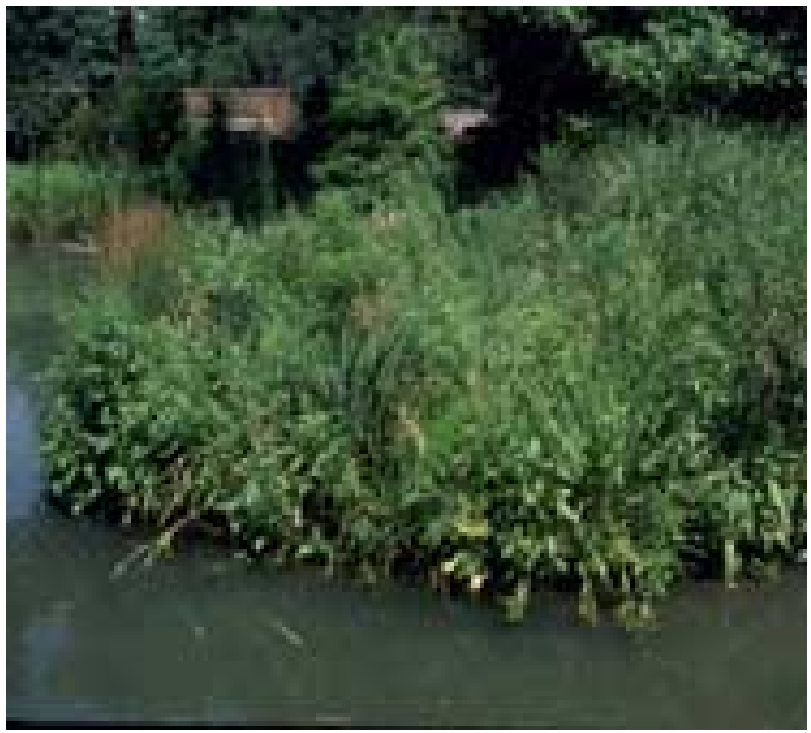
- In a setting where birds are kept captive on limited space they are prone to destroy plantings as a means to fight against boredom. New plantings require safe footings.

Prospect Park Zoo Bird Exhibit



- This little island may serve as an example of the importance of proper plant selection and anchoring. Here shown before planting.

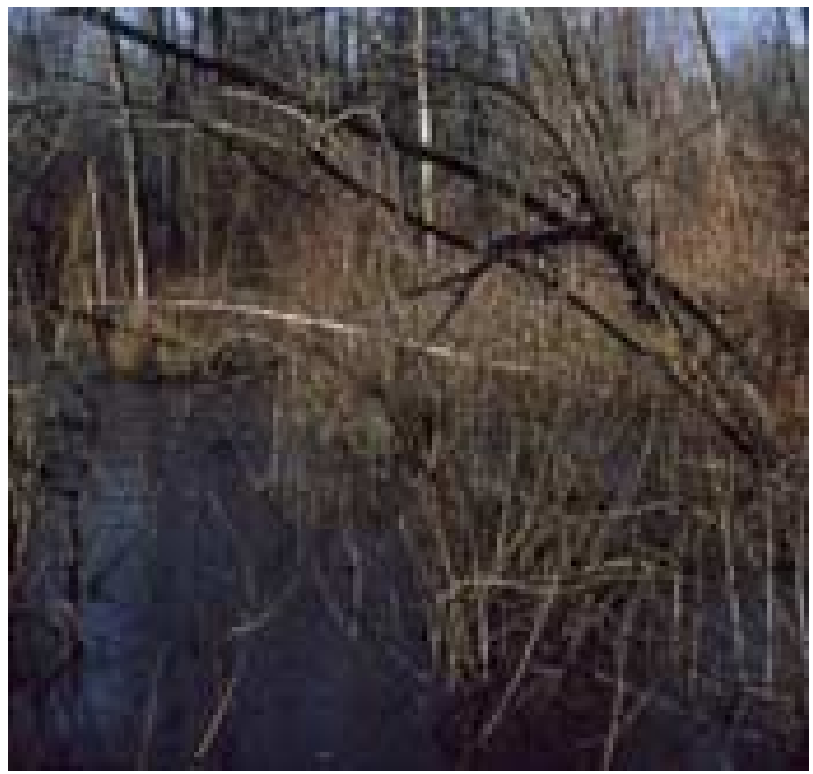
Prospect Park Zoo Bird Exhibit



- One year later the same island brims with fresh green herbaceous growth while serving as the permanent home for a couple of swans – known to be even more destructive then Canada Geese.

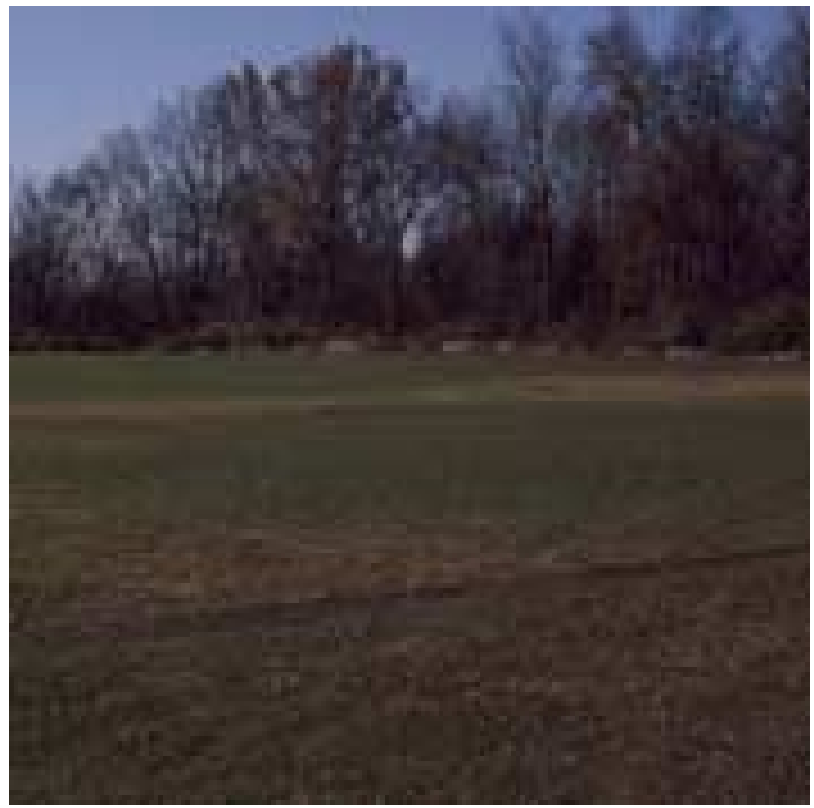
Rare Turtle Wetland

- This typical habitat of the New York state threatened Blanding's Turtle was our design target. Creative Habitat was part of a team of scientists and engineers who were striving to recreate this type of habitat instantaneously to provide uninterrupted habitat as part of a permit condition for construction.



Rare Turtle Wetland

- The only site available for the creation of this wooded wetland was a former ball field. Excavation of this area provided a receptor site for suitable plant material.

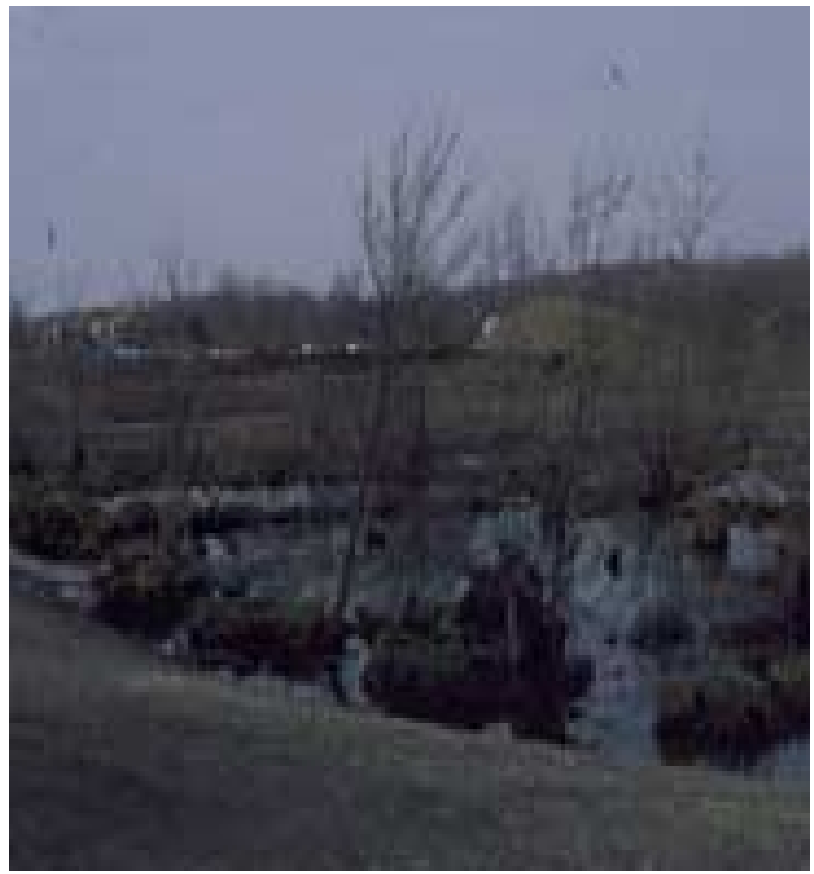


Rare Turtle Wetland

- Instead of allowing an existing small wetland to be filled in all salvageable soils and plants were removed into the receptor site.

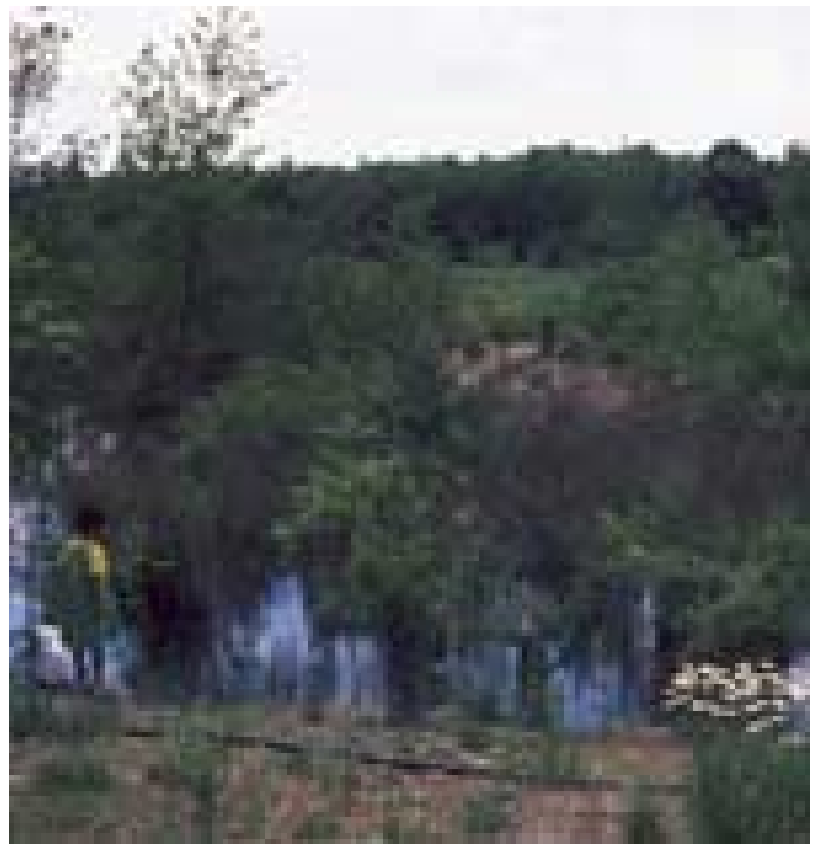
Rare Turtle Wetland

- The work was started in November; by March the new wetlands were in place.



Rare Turtle Wetland

- Although the site as shown here was only in it's first season it was already functional and structurally similar to our design model. The site has subsequently been proven to be attractive as habitat for the Blanding's turtle. Standing left in foreground an adult person.



Grassland Restoration

- This former construction staging area had developed into an expanse of Phragmites and miscellaneous “weeds”. Creative Habitat was commissioned to turn it into coastal grassland.

Grassland Restoration

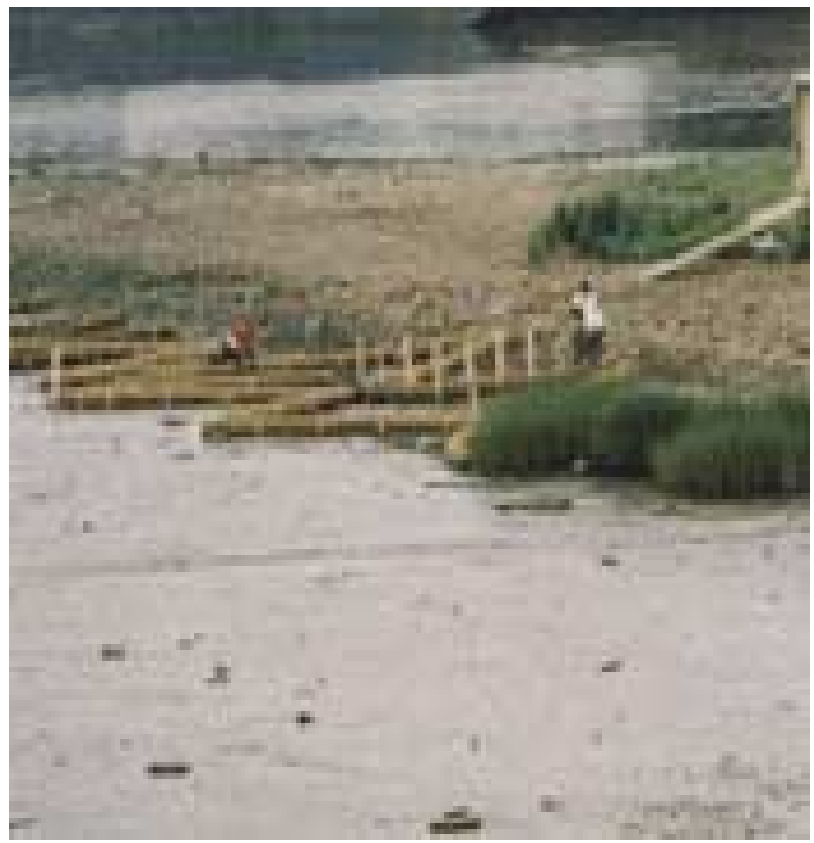
- In portions of the site Phragmites culms grew 12 to 15 feet tall.

Grassland Restoration

- Two years after restoration work was begun (as shown in this photo), the site shows no signs of a return of Phragmites. In the year 2000 the site was in it’s fourth year and was very stabile.

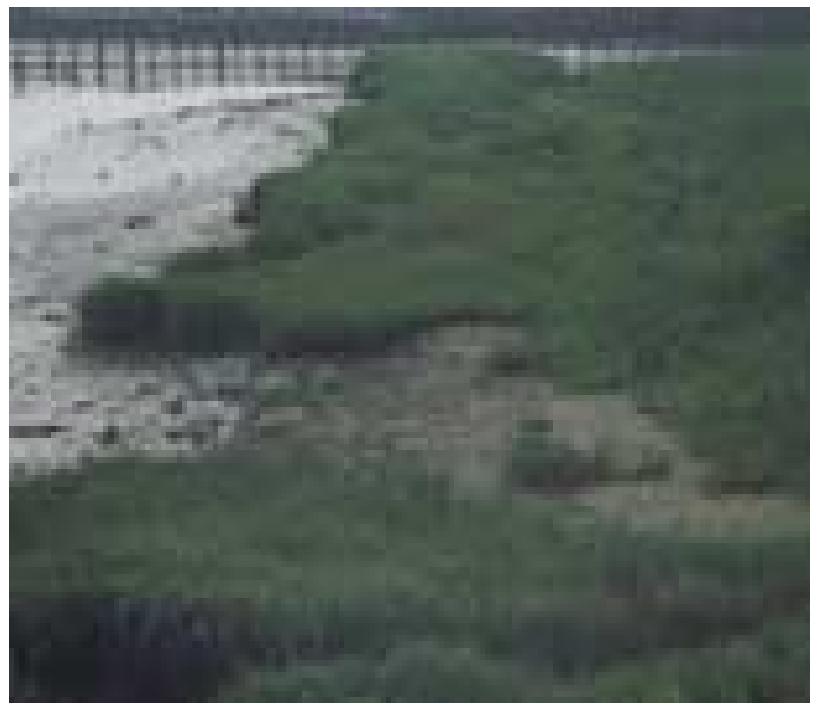
Project: Fresh Kills Landfill

- Using breakwater structures to dampen wave energy Creative Habitat reconnected remnants of salt marsh. In background barren ground was not regenerating plant growth due to excessive wave energy.

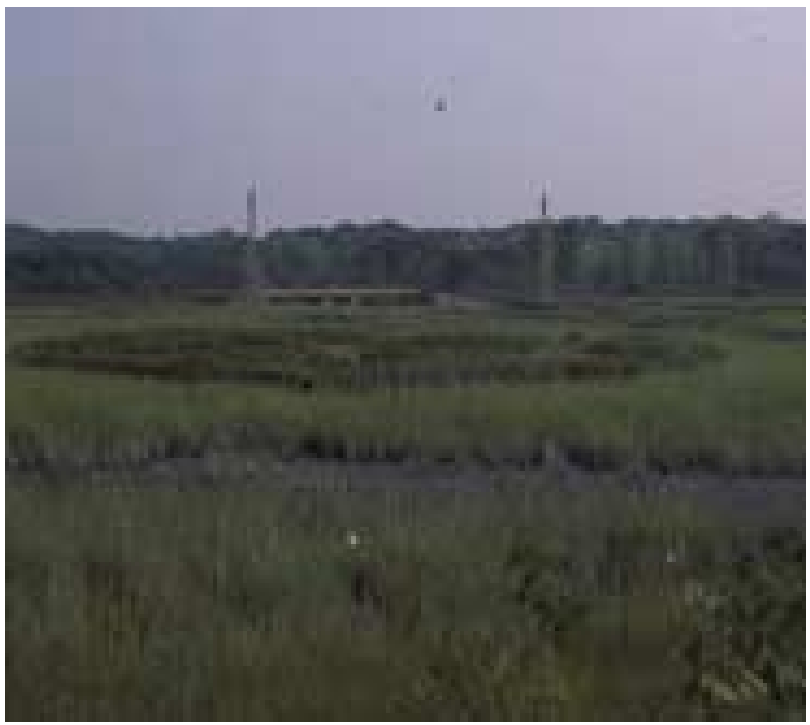


Project: Fresh Kills Landfill

- Three years later not only had the planting been a success but it had also resulted in the voluntary recruitment of salt marsh in the now protected zone further upland. In front an area that had not received a restoration treatment.



Natural Area Salt Marsh Restoration



- Alley Pond Marsh, Queens, NY, was restored under the guidance of Creative Habitat. We are currently monitoring the success of the project for five years.

- Creative Habitat Corp. has worked in various capacities with public and private clients and has the ability to enter into independent contracts or as a partner on a project team. We view the reclamation efforts at Brookhaven National Laboratory as a great opportunity for cooperation and for the creation of a multitalented and multidisciplinary team. We would be very interested in participating in this project.

- END OF SLIDE SHOW